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## ABSTRACTS

### STUDIES ON THE TUBERCULOSTATIC FACTOR IN HUMAN URINE

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In order to obtain a large quantity of a peptide-like substance in human urine which has been proven to have a marked tuberculostatic activity in a small-scale experiment, column chromatography using charcoal and ion exchange resins (Amberlite CG400, Dowex 50) was performed.

About 3.0 g of the active fraction (Fr. aE) was isolated from 18,000 kg of urine by this procedure. This fraction inhibited the growth of virulent tubercle bacilli in the concentration of 16 mcg/ml but did not inhibit the growth of other bacteria than tubercle bacilli and fungi even in the concentration of 250 mcg/ml. This fraction contains a peptide-like substance which may play an important role in natural resistance of human body against tuberculous infection.

## FACTORS CONCERNING WITH DISABILITY OF THE PATIENTS AND THE PROGNOSIS OF THE CHRONIC OBSTRUCTIVE LUNG DISEASE

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Prior to this study, the authors published the clinical study concerning with the progress and excervation of chronic obstructive lung disease (COLD), in which COLD was classified into 4 groups from the view point of the onset, the clinical findings and courses of the diseases.

In this paper, the authors attempted to evaluate the prognosis of COLD and grade of disability of the patients on the basis of their previous study.

COLD takes a turn for the worse by repeating acute excervation with infection, the observation of 41 cases with pulmonary function test in the midst, before and after the acute excervation was studied. These 41 cases were classified into 4 groups as follows; Type a; Group originated in bronchial asthma remaining obstructive ventilation insufficiency on ease and suffering from infection sometimes. This insufficiency is markedly reversible.

Type b; Group with repeating bronchitis with wheezing on excervation and taking a turn for the worse gradually. Irreversible. Besides obstructive ventilation insufficiency, restrictive ventiration insufficiency is accompanied. Hypoxemia and Hypercapnia grow to right ventricular hypertrophy. Subjective complaints are marked. Many patients belonging this group are disabled.

Type c; Group of diffuse bronchiectasis with the symtomes of chronic bronchitis since very young age. This type of COLD has the clinical and roentgenological features of pulmonary fibrosis. Most patients with this type can work except on the excervation. They have restructive and obctructive ventiration insufficiency. When such insufficiency reaches to some limit, the general state of the patient turns to worse suddenly. The prognosis is poor.

Type d; Group of restrictive ventiration insufficiency due to restrictive movement of thorax. This group is alike the severe cases of Type c. The prognosis is poor.

From these observations, it could be concluded that the diagnosis of the type of GOLD and cognition of restrictive ventilation insufficiency besides obstructive are important for the evaluation of the prognosis of COLD and disability of the patients with COLD.

## SIDE EFFECTS OF ANTITUBERCULOSIS AGENTS

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In the clinical study of the intensification of the effect of antituberculosis chemotherapy, it is one of the most important tasks to avoid the side effects caused by antituberculosis agents.

The author, with several collaborators, has been studied about this problem including drug-allergy and experienced that there are fairly many cases dropped out of the intensified regimen because of the various side effects.

In this report, the author's experiences on the incidences and the preventive measures for each drug are discussed with some references.

As for Streptomycin (SM) and Kanamycin (KM), ototoxicity is main cause of cessation of the treatment and its incidence is estimated about 4–5% for audiometry. According to the clinical results, the injection of SM or KM in the evening before going to sleep is efficacious in reducing the ototoxicity but the mechanism is not well explained. Gastric disturbance caused by ethionamide is prevented or reduced fairly by using prothionamide or by giving the tolerable maximum of ethionamide before going to sleep and the rest divided after meal.

Cycloserine (CS) is noted as the occasional cause of neuropathic disorder especially in older patients at the rate over 10% and it is shown that the incidence of this side effect can be reduced by decreasing the daily dose of CS as 0.375 g. in the patients over 60 years of age and/or under 40 kg of body weight.

Ethambutol (EB) is known to attack the optic nerve selectively but the disturbances are mostly reversible and they are detectable in the early stage by careful observation at the bed-side in the prevailing daily dose of 1g. of EB (d-form).

As the counter measure to the drug-allergy caused mainly by SM and/or PAS, the modified method of which reported initially by D. G. Simpson, is evaluated as fairly successful to get over the allergic symptoms in relatively short interruption of the chemotherapy of tuberculosis.

## EXPERIMENTAL STUDIES ON ANAPHYLACTIC SHOCK UNDER GENERAL ANESTHESIA

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There are many reports including Besredka's that general anesthesia suppresses anaphylactic shock. However, it can not be concluded that this is so, because some other doctors reported quite opposite results.

Recently, in the clinical field, importance is being placed on anaphylactic shock by penicillin. As a counter-drug for anaphylactic shock, adrenal cortical hormone, anti-histamine substances, autonomic nerve blockers, angiotonin and coronary dilators are used. In addition to these, general anesthesia is also thought useful.

According to clinical experiences, it was reported that during general anesthesia, penicillin and other drugs do not cause any anaphylactic shock. It was also reported that even in the transfusion of different blood groups, no severe shock was seen, if it was done during general anesthesia.

Here researcher have made a basic investigation to find out whether or not general anesthesia really suppresses anaphylactic shock.

Results obtained were as follows :

1) In passive sensitized guinea pigs with anti BAS serum from rabbits, ether anesthesia surely prevented anaphylactic shock by BSA.

2) Death by anaphylactic shock was not prevented either by general anesthesia using laughing gas and succinylcholin, or by the administration of morphine, atropine, tetraethyl-ammonium or chlorpromazine. Especially in general anesthesia by laughing gas or succinylcholin, even when respiration was controlled, the animal died of acute collapse of the lungs after the administration of antigen.

3) In active sensitized guinea pigs and rabbits with BSA, the suppressive effect of ether anesthesia for anaphylactic shock was weak in guinea pigs, and was weaker in rabbits.

4) We knew from the above data, the suppressive effect of ether anesthesia depended on the amount of antibody in the experimental animal and on the animal species.

5) After anaphylactic shock, the antibody decreased naturally. Especially in the passive sensitized animal, it almost disappeared. However, in the active sensitized rabbits, reproduction of the antibody began shortly after the shock, and in 8 days it returned to the same amount as before the operation or more.

Large amounts of antigen were given to be rabbits who escaped from death by shock to cause immunological paralysis. However, this ended unsuccessful at least in rabbits.

6) Using  $I^{131}$  labelled BSA, the site of antigen-antibody reaction was investigated and under ether anesthesia, the gathering of antigen in the lung or in the heart, which was found in the control group, was not seen.

7) Mechanisms of suppressive effects of ether anesthesia for anaphylactic shock were that: A) Ether acted on smooth muscles of the bronchi and made it dilate to antagonize against the constriction caused by anaphylactic shock; B) Ether acted on the coronary artery, making a higher efficiency of the heart function; C) Ether dilated peripheral blood vessels and prevented antigen from gathering in the central organs.

8) Even in the case where shock was suppressed by ether anesthesia and the patient escaped from death, pathohistologically it is common to leave in the liver necrosis resulting from antigen-antibody reaction. From this point of view, it seems necessary to pay attention to the disturbance of hepatic function as an after-effect of ether anesthesia as a countermeasure for anaphylactic shock.